

01FN046US

AMENDMENT WITH RCE

02230028aa

Amendment dated 06/09/2004

Reply to office action mailed 03/11/2004

**Amendments to the Specification:**

Please replace the paragraph beginning at page 8, line 28, with the following rewritten paragraph:

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*D* In the present invention, a vertical bias magnetic field is once applied to the magnetic layer from the vertical bias layer, and then the vertical bias magnetic field is applied to the free layer from the magnetic layer. The vertical bias magnetic field is thus applied to the free layer through the two steps, thereby facilitating the control of the vertical bias magnetic field applied to the free layer. In addition, in the direction of the magnetic field applied by the vertical bias layer, the free magnetic layer is made greater in length than the free layer, thereby placing only the magnetic layer near the vertical bias layer. This allows the vertical bias layer to effectively apply the vertical bias magnetic field to the magnetic layer and makes it possible to prevent the leakage of sense current from the layered body to the vertical bias layer, thereby allowing almost all sense current to conduct through the non-magnetic layer.

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Please replace the paragraph beginning at page 35, line 14, with the following rewritten paragraph:

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*D2* Incidentally, this embodiment has shown that the non-magnetic layer 4 can be patterned in conjunction with the fixed layer 5, the fixing layer 6b, and the upper layer 7. However, the non-magnetic layer 4 can be extended like the free layer 3b. Alternatively, the non-magnetic layer 4 may be patterned to be larger than the fixing layer 6b and ~~the fixing layer 6b~~ and smaller than the free layer 3b.

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